

Claims Status:

1. (Currently amended) A circuit device, comprising:
an insulating substrate;
a semiconductor structure positioned on the insulating substrate; and
a Peltier effect heat transfer device ~~coupled to~~ positioned in the insulating substrate and not in the semiconductor structure to transfer heat between the semiconductor structure and the insulating substrate.
2. (Cancelled) The circuit device of claim 1, wherein the Peltier effect heat transfer device is positioned in the insulating substrate.
- A2 3. (Original) The circuit device of claim 1, wherein the semiconductor structure comprises an island surrounded by an insulating material.
4. (Original) The circuit device of claim 3, wherein the insulating material comprises part of the insulating substrate.
5. (Original) The circuit device of claim 3, wherein the insulating material comprises an insulating film positioned on the insulating substrate.
6. (Original) The circuit device of claim 5, wherein the Peltier effect heat transfer device is positioned in the insulating film.
7. (Original) The circuit device of claim 1, wherein the insulating substrate comprises oxide.
8. (Original) The circuit device of claim 1, wherein the semiconductor structure comprises silicon.

9. (Original) The circuit device of claim 1, comprising a semiconductor substrate positioned below the insulating substrate.
10. (Cancelled) The circuit device of claim 9, wherein the Peltier effect heat transfer device is positioned partially in the insulating substrate and partially in the semiconductor substrate.
11. (Original) The circuit device of claim 1, wherein the Peltier heat transfer device comprises a plurality of pn junctions connected in series.
12. (Currently Amended) A circuit device, comprising:
a semiconductor substrate;
an insulating substrate positioned on the semiconductor substrate;
a semiconductor island positioned on the insulating substrate; and
a Peltier effect heat transfer device positioned in the insulating substrate proximate but not in the semiconductor island to transfer heat between the semiconductor island and the insulating substrate.
13. (Original) The circuit device of claim 12, wherein the semiconductor island is surrounded by an insulating material.
14. (Original) The circuit device of claim 13, wherein the insulating material comprises part of the insulating substrate.
15. (Original) The circuit device of claim 13, wherein the insulating material comprises an insulating film positioned on the insulating substrate.

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16. (Original) The circuit device of claim 12, wherein the insulating substrate comprises oxide.
17. (Original) The circuit device of claim 12, wherein the semiconductor island comprises silicon.
18. (Cancelled) The circuit device of claim 12, wherein the Peltier effect heat transfer device is positioned partially in the insulating substrate and partially in the semiconductor substrate.
19. (Original) The circuit device of claim 12, wherein the Peltier heat transfer device comprises a plurality of pn junctions connected in series.
20. (Original) An integrated circuit, comprising:
an insulating substrate;
a semiconductor layer positioned on the insulating substrate and having a plurality of active semiconductor island regions;
a plurality of circuit devices positioned on the semiconductor layer; and
at least one Peltier effect heat transfer device coupled to the insulating substrate to transfer heat between at least one of the active semiconductor island regions and the insulating substrate.
21. (Original) The circuit device of claim 20, wherein the plurality of semiconductor island regions is surrounded by an insulating material.
22. (Original) The circuit device of claim 21, wherein the insulating material comprises part of the insulating substrate.

23. (Original) The circuit device of claim 21, wherein the insulating material comprises an insulating film positioned on the insulating substrate.
24. (Original) The circuit device of claim 20, wherein the insulating substrate comprises oxide.
25. (Original) The circuit device of claim 20, wherein the plurality of semiconductor island regions comprises silicon.
26. (Original) The circuit device of claim 20, comprising a semiconductor substrate positioned below the insulating substrate
27. (Original) The circuit device of claim 26, wherein the at least one Peltier effect heat transfer device is positioned partially in the insulating substrate and partially in the semiconductor substrate.
28. (Original) The circuit device of claim 20, wherein the at least one Peltier heat transfer device comprises a plurality of pn junctions connected in series.

Claims 29-40 (cancelled)
